

**Short Communication**

## **SUCCESSFUL TREATMENT OF CRACKED HOOVES IN POST FMD COMPLICATION IN CATTLE**

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Ninety percent or more of lameness in dairy cattle involves the foot. Mostly involves rear part of feet, particularly the lateral claw. Tyagi and Singh (2002) reported this pattern of lameness is responsible for nutritional, feeding and managemental errors. Horny tissues covering the hooves are not living tissue - there are no nerves and they do not bleed when fractured (Warnick *et al.* 2001), but found cracked and / or detached as post-FMD complication. Unlike other structural biomaterials (*e.g.* bone, tusk, teeth, antlers, mollusk shells etc.), horn does not have a mineralized component and is composed primarily of  $\alpha$  keratin (Fraser *et al.* 1986). The dry weather is thought to be one of the predisposing factors as it renders the horn of the hoof brittle. Rehydration has a significant effect on reducing the maximum bending strength and elastic modulus of the hoof. Hereditary predisposition has also been suspected as a possible cause (Baillie *et al.* 2000). A wall crack is defined as a fracture or loss of continuity of the hoof wall. There are two types of sand cracks: horizontal and vertical. The horizontal cracks run parallel to coronet and are usually found on the dorsal surface of the digit. The vertical wall crack, also known as thimble, affects mostly the forefeet and originates either at the coronary band or on the

bearing surface extending downward or upward, respectively (Tyagi and Singh 2002).

The study was conducted on 26 numbers of pluriparous milch cattle brought to the veterinary dispensaries of different village level milk co-operative societies under Bhagirathi Co-Operative Milk Producers' Union Ltd, in the district of Murshidabad, West Bengal, India having a history of recent FMD infection were found to develop different degrees of horizontal (Fig.1) as well as vertical (Fig.2) fissures in the hoof. The animals showed varying degrees of lameness including inflammation, pain during movement and reluctant to bear weight in the affected limbs. Detachment of hooves at the coronary band region (Fig.3) was also found.

Treatment was done in two phases. In the first phase, animals were treated with Lincomycin injection @ 10 mg/kg along with Meloxicam @ 0.5 mg/kg body weight intramuscularly daily for consecutive 5 days. Regular antiseptic foot bath with Acriflavin soiution (1:1000) and the application of tight pressure bandage were continued for 5 days. In the second phase, the edges of the cracks were trimmed and smoothened by rubbing with sand

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**Fig.1:** Showing Horizontal Wall Cracks.



**Fig.2:** Showing Vertical Wall Cracks.



**Fig.3:** Showing detachment of hoof wall at the coronary band region.

paper. After thorough cleaning and removal of all the dirt as well as foreign materials and washing with Hydrogen peroxide solution the edges of the cracks were sealed by Plaster of paris. After sealing the animals were treated with 5% Copper sulphate foot bath and application of Vaseline jelly daily up to 21 days. The Plaster of paris seals were then removed. Injection Vitacept-H® (Concept pharmaceuticals) @ 2 ml/ 50 kg. body weight was administered intramuscularly once in a week for 4 weeks. The owners of these animals were advised to keep their animals over soft straw beddings maintaining hygienic conditions.

It is difficult to attribute specific co-relation between FMD and cracked hooves but FMD lesions affecting the interdigital space of the hooves resulted in chronic irritation to the corium. The horny tissues of hoof developed from the corium. Chronic irritation to the corium caused overgrowth of the hoof having altered thickness due to variable deposition of  $\alpha$  keratin as well as its elasticity (Clark and Petrie 2007). The inflammation and swelling in the hooves at the time of FMD infection increased the tensile force on the horny hoof wall and served as a predisposing factor to produce wall crack as one of the post FMD complication.

After treatment, the inflammation accompanied with pain was subsided within 3 days and the animals showed gradual uneventful recovery. Antibiotic and analgesic treatments in the 1<sup>st</sup> phase helped in controlling the infection and inflammation. Then the plaster of paris was applied to seal the cracks, which

have checked the entry of further infection and lodging of foreign materials inside and resulted in faster healing. Hardening of hoof wall was achieved with 5% Copper sulphate foot bath which acted as an astringent agent (Gogoi *et al.* 1981). Oily Vaseline jelly prevented dehydration of the hoof by retaining moisture which in turn enhanced the elastic modulus of the horny tissue preventing further cracking (Fraser *et al.* 1986).

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